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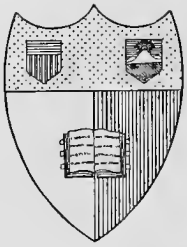

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THE HOME OF THE INDO-EUROPEANS

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BY

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FOREWORD

Far-reaching results have followed the discovery, a century or more ago, of the relationship of most of the languages of Europe with one another and with those of India and Persia. The study of these relationships developed into the independently influential science of comparative philology. It shared with Darwinian evolution the responsibility for the vast expansion, both culturally and historically, of the 19th century horizon of human thought. It brought to the modern world new conceptions of the past and a new consciousness of nationalism and racial fraternities that was not without political importance in the recent war and in the readjustments that followed it. It was early evident that the speakers of these languages of Europe and Asia were the heirs of a common culture and that their several dialects were the descendants of a prehistoric tongue, the so-called Indo-European, which was not identical with that of the Hebrews, the Babylonians, the Egyptians, or other ancient peoples.

The Indo-Europeans, it is true, emerge from the obscurity of antiquity as independent nations, scattered from the arctic circle to the equator and from the Atlantic Ocean to the Bay

of Bengal, more or less firmly established in their seats, with different languages, customs, religions, and even complexions, and for the most part quite unconscious of their kinship. But early history and tradition find many of these peoples in strange lands, surrounded or preceded by alien races. The Celts were not always in Britain, nor the Hellenes in Greece, nor the Hindus in India. They must all have been descended in some way from some localized prehistoric group of people who were united by a common speech and a common civilization.

The effort to locate the original home of this prehistoric people has for several generations engaged the imagination and the pen of countless philologists, anthropologists, and archeologists. Opinion is sharply divided between those who argue for Asia and those who argue for Europe, between those who favor Russia and those who favor Germany, between those who think they have identified and placed the Indo-Europeans racially and those who believe the race was either mixed or forever unknown, between those who consider the problem solved and those who doubt if it ever can be solved.

And to make confusion worse confounded an unfortunate element has been introduced into the discussion, particularly within the past decade, when national glorification of self and calumniation of foe induced even scholars of

repute to trace the ancestry of their enemies to Belial and that of their friends to the Indo-European prototypes of the Patroons, Pilgrims, and Puritans. Germans insist that they belong to the Nordic race and that the Nordic race is the pure Indo-European stock. French, English, and American writers claim that the Germans are not Nordics, or, if they are, then not the Nordics but the Alpines are the true Indo-Europeans.

No definite answer to this great question is as yet scientifically justified. But a probable, tentative, general solution is slowly crystallizing in the minds of many philologists—and the problem *is* primarily a linguistic one. This little book attempts to present an independent investigation of the philological evidence, and at the same time to disclose to English readers the present state of a discussion that has hitherto been best known and best advanced on the Continent.

THE HOME OF THE INDO-EUROPEANS

The Indo-Europeans

In the Later Stone Age[1] there lived somewhere a people or a group of peoples who spoke a tongue from which were descended the languages of the Hindus and the Persians, the Greeks and the Romans, the Slavs, the Celts, and the Teutons, including the Scandinavians and the English, that is, the present speech of perhaps a quarter of a billion people in Asia and most of the inhabitants of Europe[2] and North and South America. Comparative study of these various languages has reconstructed to a considerable extent not only the speech but also the daily life, the government, and the religion of this Neolithic people, known as Aryan, Indo-Germanic, or Indo-European,[3] which had

[1] The Later Stone Age, or Neolithic, is distinguished from the Old Stone Age, or Paleolithic, primarily by the ground or polished stone implements that characterized it, as contrasted with the rudely chipped flint instruments of the earlier period.

[2] The principal non-Indo-European languages of Europe are the Basque in the French and Spanish Pyrenees, the Turkish in the south of the Continent, the Lapp and Finnish in the north, the Esthonian and the virtually extinct Livonian on the Baltic, the Magyar in Hungary, and various dialects scattered through Russia. Practically all the remaining speech of Europe is Indo-European.

[3] The term 'Indo-Germanic' arose when the Germanic lan-

split into groups and wandered apart before the dawn of recorded history.

Language Insufficient Test of Race

Linguistic relationship is not in itself sufficient proof of racial relationship. The conquered may adopt the language of the conquerors, or the conquerors that of the conquered, or there may be peaceful mingling in irregular proportions of race and language. Max Müller's oft-quoted words[4] have become almost an article of philological faith: "To me an ethnologist who speaks of Aryan race, Aryan blood, Aryan eyes and hair, is as great a sinner as a linguist who speaks of a dolichocephalic [long-headed] dictionary or a brachycephalic [short-headed] grammar." When we speak of the Indo-Europeans we mean merely the people, whoever they were, that spoke Indo-European, and we imply nothing whatever as to race or racial characteristics. As a matter of cold fact and despite many opinions on the subject, we know very little racially about the

guages were thought to be the westernmost members of the family; it is still the most common name in Germany. 'Aryan' has been employed by Max Müller and many popular writers in English, but it is also objectionable because it is sometimes, and more properly, restricted to the Indo-Persian branch. The term 'Indo-European' is now generally used by English, French, and Italian philologists, and it is preferable to any of the others that have been proposed.

[4] *Biographies of Words*, p. 120.

ancient Indo-Europeans; we do not even know whether they were one race or a mixture of types.

But language is the best evidence of community of life and culture, and we can at least assume that at some time and in some more or less definite territory there dwelt a people or a group of peoples, racially pure or racially mixed, who lived, to a large extent, a common life and who spoke a tongue which was the common ancestor of the languages now spoken by the majority of the civilized peoples of the earth.

Indo-European Civilization

By the processes of linguistic paleontology, by the comparative study of the fossils of language, we know that this people constructed houses and fortified-places; that they domesticated animals, bred cattle, and raised grain and wool; that they knew how to spin and weave; that they used wheeled vehicles. They had developed a patriarchal organization of family and clan, and political government under some kind of a king. They distinguished between the mortal body and the soul, and worshipped the gods with reverence. The *Dyǎuṣ pitár-* of the Hindus, the Ζεὺς πατήρ of the Greeks, and the *Jup-piter* of the Romans show a common name and a common concept of a father-god of the shining sky. Their religion was fundamentally

a mere nature-worship, but they had distinctly ethical and spiritual ideas. Much of the exalted connotation of our ecclesiastical word *credo* has come down to us with the word itself from Indo-European times.[5]

But where did this ancient people live? That is the so-called "Aryan Question," which after nearly a century of philological investigation remains still a question, although it is perhaps in process of solution.

Traditional Home of the Indo-Europeans in Asia

It has not been much more than a hundred years since it was generally assumed that all the languages of the earth were descended, through the Tower of Babel, from the Hebrew, just as it was believed, even by such scholars as Sir William Jones, the brilliant pioneer of Sanskrit studies in the Occident, that all people and peoples were descended, through the three sons of Noah, from the first parents, who lived in the earthly paradise of Semitic tradition, in

[5] The English noun is from the verb that begins the Latin version of the Apostles' Creed, *credo* 'I believe'; from the same verb is also derived our *creed*. That to the prehistoric Indo-Europeans the word expressed genuine faith rather than mere belief is shown by its etymology: Latin *crēdo*, Old Irish *cretim*, Sanskrit *çrad-dhā*, Indo-European **kʷred-* + **dhē-* 'to place one's heart upon.' The first element is preserved in Latin *cor(d)*, Greek *καρδία* 'heart' and the second element in Sanskrit *dádhāmi*, Greek *τίθημι* 'I place.'

the Garden of Eden, in the land of the Tigris and Euphrates. Tyre and Sidon, Babylon and Damascus were more ancient than Athens and Rome. Not only Judaism and Christianity, but all the other great ethical religions had sprung from Oriental sources. It seemed obvious that all races and all cultures were of Asiatic origin.

Only in recent times has it been recognized that there is no evidence of a primeval universal language of mankind, that *Homo sapiens,* not to mention *Pithecanthropus erectus,* appeared on earth long before 4004 B.C., and that the birthplace of man has nothing whatever to do with the place of origin of the Neolithic Indo-Europeans. Modern evolutionary biology, be it said, is inclined to agree with tradition in considering Asia "the cradle of the human race," but man had lived in Europe countless millennia before the coming of the Indo-Europeans: Osborn estimates the age of the human jaw found near Heidelberg at a quarter of a million years.

With the beginnings of the science of comparative philology early in the 19th century came the knowledge that Sanskrit was the oldest of the Indo-European languages—if not the mother of them all, at least their eldest sister. Philologists concluded that the home of the Hindus must also have been the home of the Indo-Europeans, and this common home they visualized on the banks of India's most sacred

stream, the Ganges. The study of their ancient literature, the Veda, soon showed, however, that the Hindus of early Vedic times did not know the Ganges, but lived in northwest India; so the primitive home of the Indo-Europeans was moved from the banks of the Ganges to the banks of the Indus, to the country of the "Five Rivers," the Punjab.

Later it was shown that Indian and Iranian, the languages of the Hindus and the Persians, were closely related, and the home of the Indo-Europeans was moved once more, this time into the Iranian region east of the Caspian Sea. Now the philologians, who were following the Veda into wider fields, and the theologians, who were following the traditional interpretation of the Bible, met, for different reasons, on common ground for the location of our ancestral home. That common ground was southwestern Asia. It was heresy from the religious point of view, and lunacy from the scientific, to propose any other region.

The Duodecimal Argument

Formerly the Asiatic hypothesis was little more than a baseless tradition, but during the past century many and varied arguments have been offered in its behalf. One of the most recent of these arguments, and the one that has, perhaps, received most consideration, rests upon the assumption of close contact between

early Indo-European and Semitic civilizations. The evidence consists mainly of a mingling in prehistoric times of the Indo-European decimal system and the Babylonian duodecimal or sexagesimal system of numerals. Thus, early English had a "long hundred" of 120; Gothic numerals above 60 were formed differently from 60 and below; our own words for 12 and below are distinguished in form from the -teens; duodecimal or sexagesimal are our concepts of dozen and gross, our 60 minutes to the hour, 24 hours to the day, 12 months to the year, 360 degrees to the circle. Such elements are widespread in Indo-European speech, especially among the European members of the family. The claim is that these facts tend to prove that the Indo-Europeans once lived in or near Babylonian territory and colored their decimal system with its duodecimal system.

It is certain that the Indo-European system of numerals was originally, and in all essentials still is, decimal; and it is very probable indeed that the duodecimal admixture is in some way of Babylonian origin. But it is not necessary to assume therefore that the Indo-Europeans must have lived near Babylonia. Babylonian influence extended over much of southern and western Asia, over Egypt, and around the Mediterranean; the mercantile traffic of Babylon early reached as far as Greece on the west and India on the east, and there is no better carrier of numerals than commerce.

Indeed, if the Indo-Europeans had ever lived near Mesopotamia, in immediate contact with so highly developed and so vigorous a material civilization as the Babylonian, we should expect vastly more Semitic influence upon Indo-European than could possibly be indicated by the rather casual evidences that have been preserved. Furthermore, duodecimal notation appears also in the speech of a non-Indo-European, Finno-Ugrian people in northern Europe and among the Chinese in eastern Asia. No one has ventured to assert that the Chinese or the Syryenians ever lived near Babylon.

The duodecimal argument is a general one, but many scholars have presented claims in behalf of rather particular localities in Asia. Some have laid the home of the Indo-Europeans north of Afghanistan between the Oxus and Jaxartes rivers, or between the Oxus and the Hindu-Kush Mountains; others have argued for the plateau of Pamir, "the Roof of the World"; others for Armenia; others for the region north and south of the Caucasus; and still others for the Aralo-Caspian steppe. Most of these special claims have been either disproved or rendered exceedingly improbable.

Methods of Approaching the Problem

Modern philological research attacks the problem by somewhat different methods from those that were used in the past. First, it

reaches a degree of detachment by showing that the Asiatic hypothesis rests upon mere tradition and upon a number of more or less scientific arguments, most of which have faded away in the light of scholarly investigation. Next, it adopts as a principle of method the process of elimination. Many earlier writers erred: a) in arguing *ab initio* and with special pleading for this or that restricted area, without sufficient regard to the various probabilities of the other parts of the Indo-European field; b) in basing final conclusions upon one or two quite specific and isolated pieces of evidence.

In all likelihood the case never will be decided on the testimony of a single witness or the presentation of a single fact, however material it may be, but a conclusion can, it seems now, be made very probable through the preponderance of evidence. Preponderance of evidence is best obtained by starting, not with a point, but with the entire Indo-European territory, eliminating the parts from which the Indo-Europeans could not possibly have come, and then searching for the balance of probability in an effort to limit still further their prehistoric home. Many and varied are the methods employed for obtaining and testing the balance of probability, but the most direct and perhaps the one that offers most promise of successful investigation in the future is the tracing, as far as possible into the past, of the early homes and migrations of the individual Indo-European peoples.

A Land Flowing with . . . Honey

We can begin by striking off Armenia. The language is Indo-European, but there is ample Assyrian testimony to prove that as late as the beginning of the first millennium before Christ there were no Indo-Europeans in Armenia. To the south, in Mesopotamia, Syria, and Arabia, Semitic and other civilizations had flourished long before the appearance of the Indo-Europeans in southwestern Asia. To the east lies the Iranian plateau, whose languages, including those of Persia, Afghanistan, and Baluchistan, are largely Indo-European. Still further east, beyond the mountains and the "Five Rivers," live, throughout their history quite unconscious of the relationship, the members of the other branch of the Indo-Iranian stock, the Hindus of India.

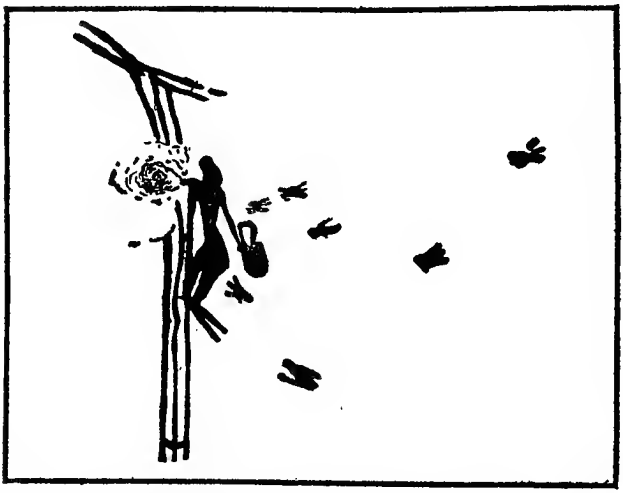
The Rig-Veda itself offers part of the quite convincing evidence that the ancestors of the Vedic Hindus had come from the north through the passes of the Hindu-Kush Mountains into the Punjab and there subjected and dispersed the dark-skinned, non-Indo-European aborigines. The Hindu (Indian) and Iranian (Persian) peoples had formerly lived together as one people, speaking the same tongue, calling themselves by the same name, Aryans, and sharing the common beginnings of their later independent developments in language, literature, and religion. Their common home was

probably in the territory of the upper Oxus (Amu) and Jaxartes (Syr) rivers, in the region corresponding to ancient Sogdiana and Bactria, and to modern Samarkand, Bokhara, and northern Afghanistan. This terrain has been claimed by more than one modern investigator as the original home of the Indo-Europeans, but against this claim there are several general considerations and at least one bit of specific evidence.

That almost every Indo-European language shares with its cognates a common word for honey or for an intoxicating drink made from honey is shown by two simple and irreproachable etymologies. The first stem, Indo-European **melit,* is not represented in Indo-Iranian nor in Balto-Slavic, but it is widespread elsewhere: Latin *mel* 'honey'; Greek *μέλι* 'honey,' *μέλισσα* 'bee'; Albanian *mjaí* 'honey'; Gothic *miliþ* 'honey'; Anglo-Saxon *milisc* 'honey-sweet,' *mildēaw* 'mildew' (literally, 'honey-dew'); Cornish *mel* 'honey'; Old Irish *mil* 'honey'; Armenian *metr* 'honey.'

The second stem, Indo-European **medhu,* is distributed over practically the entire field: Sanskrit *mádhu* 'honey, mead,' *madhūkas* 'bee'; Avestan *maδu* 'mead, wine'; Old Bulgarian *medŭ* 'honey'; Lithuanian *medùs* 'honey,' *midùs* 'mead'; Lettish *medus* 'honey, mead'; Old Prussian *meddo* 'honey'; Greek *μέθυ* 'intoxicating drink,' *μέθη* 'intoxication'; Old High Ger-

man *meto* 'mead'; Old Icelandic *miǭr* 'mead'; Dutch *mede* 'mead'; Welsh *medd* 'mead'; Old Irish *mid* 'mead'; Anglo-Saxon *medu* 'mead'; English *mead.*[6]



Man on a rope ladder gathering honey from a cleft in the side of a cliff. A prehistoric drawing recently discovered in Spain.
(By permission, from *The Literary Digest* for September 24, 1921.)

It is clear that the primitive home of the Indo-Europeans must have been a honey-land, a land in which the honey-bee abounded. Now it seems to have been shown that the honey-bee did not exist in the land of the Oxus and Jax-

[6] There can be no doubt that the drink was familiar to practically all Indo-Europeans before their separation, and to the various peoples for many centuries after their separation. It is interesting to note that, while mead has been supplanted

artes, in fact, that it is native in Asia only within a narrow zone which runs through Asia Minor, Syria, northern Arabia, Persia, Afghanistan, the Himalayas, Tibet, and China. In Turkestan it did not exist. Indeed, not one of the Asiatic sites that have been seriously considered by modern philologists as the possible home of the Indo-Europeans falls within the bee-belt, although one or two of them border on it. In Europe, on the other hand, the bee is indigenous almost everywhere.

Evidence of Floral and Faunal Names

We can not cut off all of Asia by showing that the Indo-Europeans must have lived in the temperate zone, and not even in the southern part of that zone, but we can tend to eliminate much of southwestern Asia, the only part of that continent which offers the slightest *prima facie* claim. There are no anciently common Indo-European words for elephant, rhinoceros, camel, lion, tiger, monkey, crocodile, parrot, rice, banyan, bamboo, palm, but there are common words, more or less widely spread over Indo-European territory, for snow and freezing cold, for oak, beech, pine, birch, willow,

by beer or wine almost everywhere else, it is still known to the Lithuanians, who are in other things, too, so tenacious of the Indo-European past. Apparently they have preserved both the name and the drink nearly as they were thousands of years ago.

bear, wolf, otter, beaver, polecat, marten, weasel, deer, rabbit, mouse, horse, ox, sheep, goat, pig, dog, eagle, hawk, owl, jay, wild goose, wild duck, partridge or pheasant, snake, tortoise, crab, ant, bee, etc.

However, such evidence must be weakened by several, not mutually exclusive, considerations:

a) Absence of proof that the Indo-Europeans had a name for a thing does not necessarily imply that they did not have the thing. There is no uniform, widespread word for milk: the name changes almost from language to language. And yet the Indo-Europeans must have had a word for milk, for they were a cattle-raising people, and they themselves were mammals.

b) Some of the examples just mentioned are preserved in only two or three languages and are insufficiently authenticated as universal Indo-European. The word for tortoise appears only in Greek and Slavic. It may be a special development in those languages in the sense of 'the green one' (from an Indo-European word for green), or it may be borrowed from a pre-Indo-European language.

c) Even if a word is old and widespread we can not always be certain as to what it meant to the primitive Indo-Europeans. The names of trees are especially subject to variation in meaning. Related stems signify 'beech' in Latin and the Germanic languages, but 'oak' in

Greek, 'elder' in Slavic, and 'elm' in Kurdish.

d) A migrating people sometimes applies an old name in a new region to a new, or at least a different, plant or animal. The word *gopher* is appended to a squirrel in Wisconsin, to a rat in Missouri, to a snake in Georgia, and to a turtle in Florida.

e) A word may be widespread and have the same meaning in many Indo-European languages, and the word still not be originally Indo-European. The word *tobacco* is almost universal and the plant is cultivated in many countries, but it would be rash to assume therefore that the prehistoric Indo-Europeans were ardent nicotians.

f) Some of the plants and animals included in the list just given are not sufficiently restricted zoogeographically or phytogeographically to furnish climatic evidence for the original home. With the exception of a few islands, snakes are found almost everywhere between the arctic and antarctic circles.

g) A people or a group of peoples may import a product from a distant clime and with the product borrow its native name. The word *potato* (English, Spanish, Italian, dialectic German, etc.) was borrowed with the vegetable from the Caribbean Indians.

h) The vocabulary of a language transcends actual experience. Most of us have never seen a dodo, a great auk, a hippogrif, an aardvark, or even a European bison.

Evidence of Vocabulary Cumulative rather than Specific

It has become fashionable in late years to discount efforts to restore Indo-European prehistory through the evidence of common Indo-European vocabulary, and too much weight has been given by recent writers to some of the considerations that have just been mentioned. These considerations are precautions and qualifications rather than objections. Any one of them may apply, to be sure, in any given case, but none of them has more than occasional application. The names of familiar things are usually well preserved. The *argumentum ex silentio* can be ruled out of court as a fallacy only when it is applied to the absence of individual words; nothing less than a race-wide conspiracy could kill *all* the words of a prominent group (the Germans tried it with their French loan-words during the war), and if Indo-European *milk* has perished, *cow, udder,* and *cottage-cheese* (Tacitus's *lac concretum*)[7]

[7] The various editors of Tacitus render the phrase (*Germania,* 23) by 'curdled milk'; several say specifically that cheese was not meant, and Gudeman maintains, on the authority of Pliny, that cheese was unknown to the barbarians. Granted that solid cheese is a late product, and that the Germans learned dairying from the Romans, Tacitus nevertheless must have meant something like cottage-cheese. The Latin adjective connotes a more substantial congelation than that of curdled milk; Livy applies it to ice. Several etymologies indicate that the early Indo-Europeans had some sort of soft cheese. Caesar, *Bellum Gallicum,* VI. 22, says that the

have survived. A word found in only two or three Indo-European languages is likely to be original Indo-European if those languages are more or less separated geographically. The majority of borrowings can be traced and checked by historical, cultural, or purely phonetic criteria. The giving of an old name to a new thing is only an occasional process. Even with modern transportation the number of imported products is nearly always very small in proportion to the number of native products. And the language of Neolithic man was, for the most part, restricted to the physical world immediately about him.

Such evidence as that drawn from vocabulary is cumulative. If a number of Indo-European languages had a word derived in each case from the same stem, and if the literature of each language indicated that the word in that language signified, for example, the same, or approximately the same, animal as in the other languages, and if the animal were familiar enough to make borrowing unlikely, then it would be absurd to deny the probability that the ancient Indo-Europeans knew that animal.

And if the floral and faunal words that are

food of the Germans consisted chiefly of milk, cheese (*caseus*), and flesh. The editors of the *Germania* have apparently ignored the fact that Tacitus lists *lac concretum*, together with wild fruits and game, among the solid foods of the Germans, and does not include it in the preceding passage, which tells of their drinks.

more or less common Indo-European property are predominantly those of the temperate rather than the torrid zone, it is only reasonable to suppose that the Indo-Europeans came from the temperate zone. And certainly the flora and fauna of the Indo-Europeans indicate Europe rather than Asia as their original home.

Even those who are most skeptical of such evidence admit that the Indo-European names for trees prove that the original settlements were not in the southern peninsulas of Europe. If, now, we cut off the territory in Europe between the 30th and 45th parallels, we have, roughly, the peninsulas of southern Europe, together with northern Egypt and the Morocco-Algeria strip of northern Africa. This same belt between 30° and 45° would, when extended to Asia, include every section of that continent that has ever been competently proposed as the original home of the Indo-Europeans—with the single exception of the Indian peninsula, which modern scholarship has unanimously rejected. The flora and fauna of this strip seem even less Indo-European than those of the corresponding strip in Europe.

If it be objected that the European members of the family might have inherited names for tropical or subtropical plants and animals and abandoned them when there was no longer need for them, the answer is that the Indo-Iranian names for those plants and animals

are, for the most part, obviously secondary in origin and, from the Indo-European point of view, late and local in formation. The Sanskrit name for the banyan is a compound which means 'the down-growing tree'; the Sanskrit word for lion appears elsewhere only in Armenia, and the word for tiger only in Armenia and Persia, where it was borrowed from India; the name for elephant means 'the beast with a hand'; the monkey was known either as 'the brownish-reddish animal' or as 'the forest-animal.'

Indo-Iranian literature corroborates the purely linguistic evidence. The Avesta, the ancient Bible of the Zoroastrian Persians, does not know the lion, tiger, or elephant. In the Rig-Veda, the oldest literary monument of Indo-European as well as Indian speech, the tiger is not mentioned, but it is familiar to the other and later Vedas. The elephant is explicitly referred to only twice in the Rig-Veda; the fact that both times it is described by a phrase rather than designated by a name is an almost certain indication that the animal was new and strange to the authors of the hymns. In the later literature, after the elephant had become commonplace, the expression 'the beast (*mṛgá*) with a hand (*hastín*)' was reduced to the noun *hastín* 'elephant.'

The Fables of the Tortoise and the Eel

But it is not merely as a general indication of climatic conditions that the Indo-European flora and fauna are of interest in this discussion. If the habitat of an individual Indo-European plant or animal can be sufficiently localized, it may help us to localize the Indo-Europeans themselves. We have already noticed the important rôle played by the bee in this connection. But such assistance must always be accepted with caution and reserve. Due allowance must be made for the facts that plants and animals, as well as Indo-Europeans, can migrate, in the course of many centuries, far from their original home, and that conditions of soil and climate have not everywhere remained unchanged for the past five thousand years. The Indo-European antiquity of the name for a plant or animal must be well established, and the facts as to its appearance or non-appearance in any given region must be well authenticated.

The point has been made that while the range of the tortoise extends far to the north in eastern Europe, it is not found in western Europe north of the 46th parallel, which corresponds approximately to the southern borders of Switzerland and Hungary. This would exclude Germany and Scandinavia. Whatever force there may be in the argument ultimately depends, however, upon the original Indo-Euro-

peanism of the word for tortoise, and this, we have seen, is in no wise fully established. The word occurs only in Greek and Slavic, and it may be either a loan-word or a special development in those two languages.

One philologist maintains that southern Russia, which has found strong supporters, is out of the question because the eel does not occur, according to the zoologists (Brehm and others), in the streams that drain into the Black Sea and the Caspian. But another philologist has collected local evidence that eels do abound in the waters of southern Russia.

The Beech Argument

Of the flora and fauna, however, the beech tree has been the chief center of controversy. The present philological attitude is in general one of skepsis as to its evidence, but at least it compels certain probabilities that are not without value. It has already been observed that the stem which means 'beech' in several languages has cognates in other languages that signify 'oak,' 'elm,' or 'elder.' The addition to our group of the Slavic 'elder' and the Kurdish 'elm' and various phonetic considerations require the abandonment of the former etymology that connected the word with the root 'to eat' and thus made it mean, literally, 'the tree with edible fruit.' The addition of the Slavic and Kurdish stems also establishes our word se-

curely as Indo-European and leaves uncertain only its original meaning.

The Indo-European word must have had an arboreal signification. It unquestionably means 'beech' in Latin and in various Germanic languages. In Greek it means not 'beech,' but '*Quercus esculus,*' a kind of oak that bears an esculent acorn. By some it is thought that the Greek word earlier referred also to the native sweet-chestnut that is still so characteristic of northwestern Greece. In any case, all three trees, beech, oak, and sweet-chestnut, bear edible nuts and belong to the same family, Fagaceae. The beech is apparently not indigenous in Greece proper, and the probability is self-evident that when the Hellenes invaded the peninsula and failed to find their familiar beech trees they gave the name to a similar tree, the chestnut or the oak.[8] A parallel is found in a Middle Low German word which means both 'young beech' and 'young oak.' The beech tree is thoroughly established for west Indo-European. Among the east Indo-Europeans the stem is wanting or it means 'elm' or 'elder.' Here again we have a semantic parallel: a Ger-

[8] There is, of course, no intention of implying that either the early Indo-Europeans or the invading Greeks classified plants and animals into anything like the genera and species of the Linnean system. But resemblances and relationships would be keenly observed by a primitive folk whose very lives depended on knowledge of the animal and vegetable world.

man loan-word in Lithuanian means both 'beech' and 'elder.'

The beech is decidedly a tree of the temperate regions. It seems not to have been native in the southern peninsulas of Europe, nor does it grow north of 60°, the latitude of Christiania and Petrograd. We have Caesar's testimony[9] to the effect that at the beginning of our era the beech had not yet appeared in England; similar evidence is furnished for Sweden, Holland, Denmark, and Schleswig-Holstein. Botany says unhesitatingly that the beech is not native east and north of a line running from Frisches Haff, near Königsberg, through Old Prussian and Lithuanian territory, along the present eastern border of Poland, curving through the Ukraine almost to Kiev, circling back through Roumania to the Black Sea, and thence jumping to the Crimea and the Caucasus. The beech does not extend into Asia beyond a narrow strip of Asia Minor and the northern provinces of Persia; even the advocates of the Asiatic origin of the Indo-Europeans nowadays leave these regions out of consideration.

Now to return to our Indo-European word. The uniformity of meaning in the west and the lack of it in the east might suggest that even before the separation the Indo-Europeans were living partly within and partly without the beech region. But the uniformity of form in

[9] *Bellum Gallicum*, V. 12.

east and west indicates that there was once uniformity of meaning also. If the meaning was 'elm,' 'elder,' or simply 'tree,' the Indo-Europeans could have come originally from east of the beech line. But no one has ventured to propose 'elm' or 'elder,' and 'tree' is opposed by the frequent specialization of the meaning 'beech.' If the original meaning was none of these three, it must have been 'beech.' And if it was 'beech,' the Indo-Europeans apparently came from somewhere in the central belt of Continental Europe west of the Niemen and Dnieper rivers. Certainly the beech tree does not fit into any realistic picture of the Asiatic origin of the Indo-Europeans, and we know at least that a large part of the Indo-Europeans, those of the west, lived in prehistoric times within the European beech region.

The Silver Birch Tree

But the best established Indo-European tree is the white or silver birch, *Betula alba;* its name is the same almost everywhere from Iceland to India. There is no question that it was exceedingly well known to the prehistoric Indo-Europeans, nor that the tree they knew was this particular variety—their name for it means etymologically 'the shining, white tree,' and *Betula alba* is the common European and Asiatic birch.

The tree itself does not grow as a forest tree

in Europe south of 45°, approximately the line Bordeaux—Bucharest; it does not exist in Greece. And only east of the Vistula does it form birch forests. The real home of the birch is the ante-bellum Russia, together with southern and eastern Siberia; nowhere else are found the vast birch forests that so frequently characterize the landscape in those countries. The birch alone furnishes a strong probability that the Indo-Europeans came originally from somewhere north of the 45th parallel and east of the Vistula.

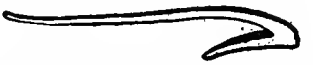
Testimony of Anthropology and Archeology

Anthropology and archeology may in time throw a revealing light upon the culture and the geographical location of the Indo-Europeans of the Stone Age, although it will always be difficult to determine from the examination of a skull or a stone ax what language their owner spoke in life. If the skulls or the axes of the Indo-Europeans differed in form from those of other Neolithic peoples, we do not yet know in what way. Here lies the great gulf between comparative philology and her two sister sciences, a gulf that will not be completely bridged until we can identify the Indo-Europeans racially, ascribe to them definite archeological remains, and designate those remains by their Indo-European names.

In attempting to restore ancient Indo-Euro-

pean civilization the limitations of the medium in which the comparative philologist works compel him to yield at two important points to the archeologist, from whom, however, he can, as yet, obtain only indirect assistance. In the first place, comparative linguistic material carries the investigator back only to the period immediately preceding the separation of the Indo-European languages, a time when, in all probability, the parent stock already showed marked lines of cleavage, both linguistically and geographically. Even the element of time is not certain, for Indo-European chronology is far from fixed and it is probable that all the peoples did not take leave of the others at the same time. What lay back of this period of disintegration is, save for an occasional speculation, beyond the ken of comparative philology. In the second place, words, as symbols of objects and institutions, do not always carry with them complete and accurate descriptions of the things they designate. To take a modern example, the word *corn* means 'maize' in America, but it generally means 'wheat' in England, 'oats' in Scotland, 'barley' in Sweden, and 'rye' in Germany. Other and older Indo-European languages likewise give us no common meaning beyond that of 'grain,' and we do not know from language what variety or varieties were familiar to the Indo-Europeans.

A more favorable example will show the possibilities of archeological light upon our particular problem. Comparison of various languages proves that the ancient Indo-Europeans were acquainted with some kind of plow: Armenian *araur*, Greek ἄροτρον, Latin *arātrum*, Old Irish *arathar*, Old Icelandic *arðr*, Old Bulgarian *ralo*, Lithuanian *árklas*. But the word itself does not tell us whether the prehistoric Indo-European implement was a forked stick or a gang-plow operated by a Ford tractor. In this case, however, there are linguistic sidelights. Other stems that mean simply 'plow' in several languages are applied here and there to various objects, such as hook-plow, the crooked piece of wood on a plow, colter, plowshare, branch or bough of a tree, horn, stake, stick, sharp wooden peg, pitchfork. This seems to imply that the Indo-European plow was wooden, hooked, and pointed, but it does not describe the plow.



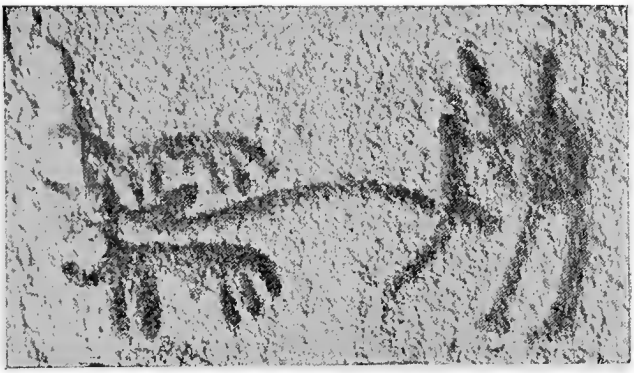
The simplest and oldest form of plow.
(From Daremberg-Saglio, *Dict. des antiq. gr. et rom.*)

Archeology, however, assists comparative philology in drawing a fuller picture of the Indo-European plow and of Indo-European agriculture. Antiquarian researches show that the oldest type of plow, the so-called hook-plow, was developed out of a wooden hook used as a hoe and that it consisted of a single limb or root

of a tree with a shortened and sharpened branch. It had only two parts, the pole for drawing and the hook that broke but did not turn the soil. In early times a handle was added if one had not been left on when the limb was cut from the tree, and numerous stones have been found among Neolithic remains which apparently had been attached to make the primitive plow more penetrating and more durable. Prehistoric wooden plows of the Bronze Age have been found in West Prussia, Jutland, and elsewhere. The plow is extremely old, but it developed very slowly. A rock-carving in Sweden which belongs to the Bronze Age shows a plow of the primitive kind, but drawn by two oxen and provided with a handle. The Greeks of the 8th century B.C. must have used almost as antiquated an implement; Hesiod[10] speaks of the farmer's cutting an oak in the forest for his plow and of there being two sorts, one in which the several parts were fastened together, and the other made of a single piece of wood. And the Persians of to-day use a plow that can represent but little advance over that of their Indo-European ancestors.[11]

[10] *Works and Days,* 425 ff.

[11] *Cf.* A. V. Williams Jackson, *Persia Past and Present,* pp. 85, 86: "The Persian plow . . . consists of the crotch of a tree cut in such a manner that one of the two branches may be sharpened and shod with iron to serve as a plowshare, while the other, or main trunk, serves as the beam. Bullocks or cows are hitched to the unwieldy implement."



Rock-carving of the Bronze Age at Tegneby, Bohuslän, Sweden: plow drawn by two oxen under double yoke. The plowman apparently wields a goad.
(From Sophus Müller, *Charrue, joug et mors.*)

A grain-sickle of the Stone Age. The blade is of flint, the shaft of wood. Found in Denmark.
(From *Aarb. f. nord. Oldk.*, 1898.)

It seems clear that the Indo-European plow was made originally of a single natural limb of a tree, but the fact that before the separation the Indo-Europeans had names for cattle, yoke, and wheeled vehicle indicates the probability that the plow was drawn by oxen. But the important thing is to know that they had reached the agricultural stage of civilization, and this we can learn from etymology alone. Although they were still in large part, or in many districts, a nomadic, cattle-raising people, they had developed a fair degree of primitive agriculture, as is evidenced by words (chiefly European and Armenian) for plow, harrow, furrow, seed, arable field, sickle, chaff, millstone, etc.[12]

There have been various explanations of the fact that common Indo-European words of agriculture are so largely restricted, in their distribution, to Europe and Asia Minor—in other words, that they do not appear more frequently in Indo-Iranian. The best assumption is that the Indo-Europeans, while still one people, were divided into two groups, the one nomadic, but occasionally cultivating the soil, the other dis-

12 We need not concern ourselves here with the recent general theory that agriculture precedes the nomadic life and the domestication of cattle. For a long period before the separation the Indo-Europeans were nomadic, cattle-raising, *and* agricultural. The same remark applies to the narrower and more philological argument in which it is maintained on the one side that the Indo-Europeans were nomadic, and on the other that they were agricultural.

tinctly agricultural. Such a division of one and the same folk has been pointed out by Herodotus[13] for the ancient Scythians and the Persians, and it exists to-day among African tribes. With this assumption for the Indo-Europeans agrees the enormous importance of the cow in the early life of the Hindus, an importance which is obviously inherited from a much older tradition, as is shown by ancient Sanskrit compounds, such as *gópati* 'leader, master' (literally, 'lord of cattle'), *gopâ* 'guardian' (literally, 'cowherd'). The Indo-European ancestors of the Indo-Iranians were apparently the nomadic, cattle-raising element of the original stock.

It is apparent that all this is of great importance with regard to the cultural *niveau* of the ancient Indo-Europeans and the location of their home. The steppes of southern Russia, for example, were especially adapted to the cattle-raising of nomadic peoples, but central, northern, and western Europe was heavily covered with virgin forest until medieval times; one recalls Tacitus's gloomy picture of the monotonous forests of Germany. Indo-European agriculture probably began and long continued chiefly in wooded country, especially on the borders of forests and in the alluvial soil of river-valleys. It is doubtful if much land was cleared for tillage, for trees had to be felled, if

[13] I. 125 and IV. 18, 19.

Shell-heap.
(By permission, from Tyler, *The New Stone Age in Northern Europe.*)

felled at all, with flint axes or the adventitious use of fire.

But if comparative philology is indebted to archeology for such aid as has just been illustrated by Indo-European agriculture, there are, on the other hand, in any account of prehistoric civilization many features that can be supplied only by language. Physical remains of Neolithic culture are preserved to us only in graves, in the communal rubbish-dumps known as kitchen-middens or shell-heaps, and by stray chance here and there in the earth, in caves, lakes, and swamps. Only a small proportion of objects could have been put in protected places, and a still smaller proportion could have remained intact to our day. There are numerous and sometimes striking exceptions (prehistoric loaves of bread have been found in Sweden), but for the most part articles made of such materials as wood, wool, leather, reed, bark, and bast have disappeared. Organic remains have seldom survived except when they have been charred by fire, and comparatively little is left from Neolithic times save stone implements.

Such gaps are often filled by comparative philology. When the people of the Later Stone Age did not live in caves or pits, they dwelt in huts or houses of wood (the Indo-Europeans did not know building with stone until the invading Greeks and Romans learned it from their Mediterranean predecessors), but only

scanty traces of these houses have survived. Nevertheless, all the essential parts of an Indo-European house of the period can be designated and its structure described by comparative philology.

Some philologists are inclined to hand over to anthropology their main hope for a solution of the Indo-European question, and few have written on the subject without a discussion of long-headed and short-headed races (dolichocephalic and brachycephalic). More often than not they have assumed the Indo-European stock to have been tall, blond, and long-headed, much the type of the modern Scandinavians or the early Germans as they were described by classical writers.

But the cephalic index is merely a ratio. The greatest length is always assumed to be 100; if the breadth is 75 or less, the skull is dolichocephalic, otherwise it is brachycephalic.[14] This criterion by itself is obviously unsatisfactory by reason of its limitations. To be sure, 2/4 is equal to 3/6, but a box 3′ x 6′ is larger than one 2′ x 4′ and may differ from it greatly in shape and value.

Moreover, whether it be among the living Chinese or in the Neolithic graves of Europe, long skulls are nearly always found with short

[14] The cephalic index may be obtained in any given case by multiplying the greatest cranial breadth by 100, and dividing the product by the greatest cranial length.

skulls, and *vice versa.* The phylogenists are disposed to admit that there is a large degree of non-hereditary variability in the form of the human head, and that the cephalic index is dependent upon many causes.[15] Even in cattle the mountains and the coasts seem to develop different types of skulls. And it may be that the Scandinavians, to whom so many scholars have pinned their faith as the type of the ancient Indo-Europeans, owe their long heads, not alone to race, but partially, at least, to hyperthyroidism and ultimately to the iodine of the seas near which they have lived, and from which they have obtained a considerable part of their food.

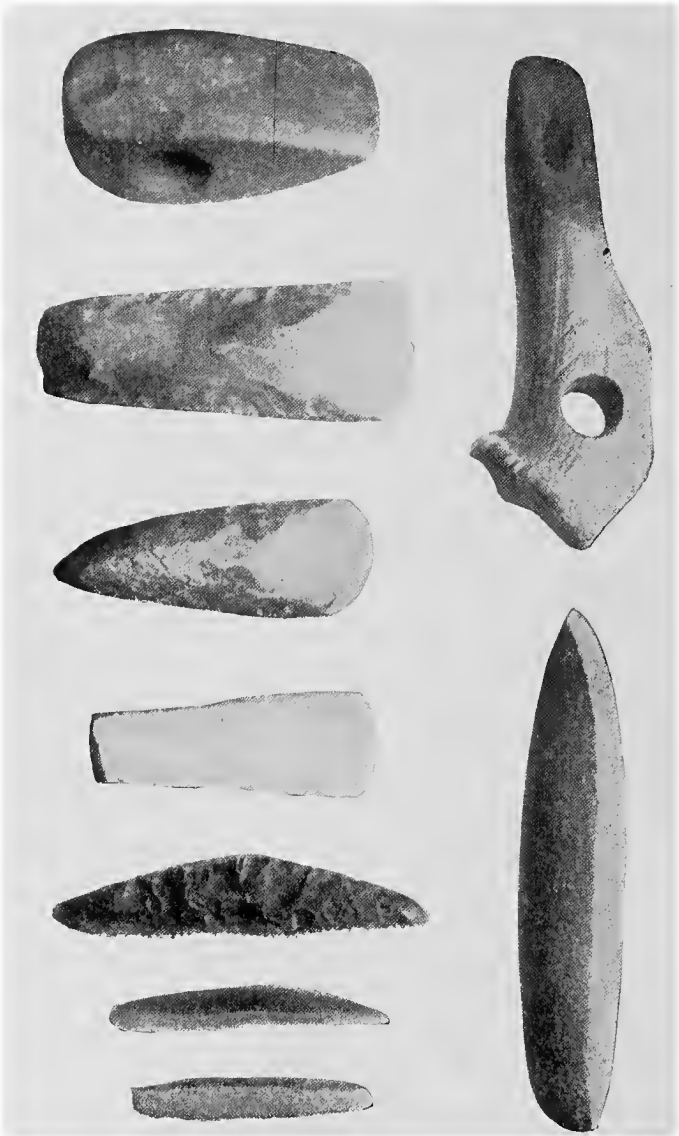
Certainly environment plays a sufficiently important rôle in these matters to confuse the issue and to prevent cranial measurements from serving, in themselves, as complete and accurate criteria of race. Likewise have failed or proved inadequate all of the numerous efforts to deduce Indo-European physical characteristics from such vague testimony as that offered by Homeric adjectives, or Assyrian inscriptions, or Pompeian mosaics. And when to these con-

[15] *Cf.* E. Tschepourkowsky, *Contributions to the Study of Interracial Correlation,* in *Biometrika,* 1905, vol. 4, p. 286; G. P. Frets, *De erfelijkheid van den hoofdvorm,* in *Handelingen van het Nat. en Geneesk. Congres,* Leiden, April 1919, p. 351; G. P. Frets, *Heredity of Headform in Man,* in *Genetica,* 1921, Deel 3, pp. 196, 251, and especially the numerous references on pp. 254 ff.

siderations is added the fact that so far not a single human skull has been identified as coming from the Indo-European homeland or as belonging to an Indo-European inhabitant of that land, it will be seen how futile is all discussion of a prehistoric Indo-European 'type.'

It is of course possible that the answer to the problem that concerns us will yet be dug from the earth. It has been claimed that the skulls of the old Romans did not differ in form (mixed long and short) from those of the Etruscans, but that they were materially larger. Similar indication of great cranial capacity on the part of the Indo-Europeans seems to have been found among the Iranians northwest of India. Indeed some anthropologists believe that they have discovered close relationship between the Neolithic inhabitants of Europe and the Indo-Iranian type of Asia, and look, in this way, to the designation as Indo-European of the remains of the prehistoric civilization of central Europe.

This achievement has not yet been realized, but such efforts represent the kind of investigation that keeps alive the hope of ultimate success. The philologist still trusts that the anthropologist may provide the Indo-European labels for the finds of the archeologist, but the probability is very slight that the racial type of the primitive Indo-Europeans will ever be ascertained. Indeed, from a period so remote as to preclude identification, they may have been a



Types of tools and weapons of the Stone Age. **Flint saw near the bottom.** Originals in Museum für Völkerkunde in Berlin.

(From Feist, *Kultur, Ausbreitung und* ***Herkunft der Indogermanen.***)

conglomerate of various types and had no racial identity.

Meanwhile, however, we have the valuable and positive archeological testimony that the proethnic Indo-European civilization of Europe is impenetrable, and that central European implements indicate indigenous origin and continuous development. With almost every advance of Continental archeology the European prehistory of the Indo-Europeans retreats into remoter antiquity.

But the time has not yet come for an amalgamation of the three sciences that we have been considering, even for the temporary purpose of a specific investigation like that into the home of the Indo-Europeans. Language, culture, and race are seldom cut to the same pattern. From the archeological point of view the Indo-European question is hardly ripe for discussion. Prehistoric ethnology is a difficult field in which few certain results have as yet been reached. And comparative philology is inclined to hope that further linguistic researches within and without the Indo-European field, and especially in languages that have recently been discovered or whose Indo-Europeanism is in question, languages such as the Finno-Ugrian, Tocharian, Hittite, Lycian, Lydian, Luvian, may throw new light upon the movements and relationships of prehistoric peoples. And there is always the hope that additional Indo-European languages or other linguistic evidence may be revealed.

A Recently Discovered Language

According to their treatment, respectively, of certain original consonants, the various Indo-European languages are divided into two great groups, the so-called *centum* languages and the *satem* languages.[16] The *centum* group is, with the exception of one minor language, western and entirely European; to it belong Greek, Latin, Celtic, and Germanic. The *satem* group lies, with one, geographically slight, exception, the Albanian, to the east of the *centum* group, and its largest part is situated in Asia; it includes Indo-Iranian, Balto-Slavic, Armenian, and Albanian.

If, as is now well established, the Tocharian, an Indo-European language recently discovered in East or Chinese Turkestan, is a *centum* language, that fact alone would seem to be an indication of European ancestry, for wherever the Indo-Europeans originated it is clear that the European languages are pre-eminently the *centum* languages. The Tocharian is probably the only *centum* language in Asia, and it is, on the face of it, not so plausible that all the *centum* languages of Europe came from this limited

[16] The names are derived from the Latin and Avestan words for hundred, which illustrate the variation. Thus, the Indo-European palatal *k* becomes a hard guttural *k*(*c*) in the one group, but a spirant or sibilant in the other group: Latin *centum*, Greek *ἑ-κατόν*, Old Irish *cēt*, but Avestan *satem*, Sanskrit *çatám*, Lithuanian *szimtas*.

and isolated territory, as that the Tocharians came by secondary migration from Europe, where and where only *centum* speech is thoroughly at home.

The Tocharian has quite recently been used as the *pièce de résistance* in a collection of arguments intended to prove the probability of the Asiatic origin of the Indo-Europeans. None of the manuscripts to which we owe our still incomplete knowledge of Tocharian bear dates; they seem, however, to belong to the latter half of the first millennium after Christ. Certainly we have no record of the language that is older than 500 A.D. Chronologically, the Tocharian that has been preserved to us is but a tottering guide-post to the Indo-European of three thousand years before. Moreover, the language itself indicates that the Tocharians were relatively late Italo-Celtic emigrants from western Europe.—Incidentally, one wonders if there has ever been a longer tribal migration: from, say, the upper Danube to within the shadow of the Great Wall of China, almost quarter-way around the globe.[17]

[17] One thinks of the loosely knit Mongolian empire of the 13th and 14th centuries, which extended its dominions from the China Sea to the banks of the Dnieper, and of the yoke it laid for several centuries on the eastern Slavs. But the Mongolian movement was one of conquest and devastation, and not the migration of a people to its distant and permanent home.

Other Arguments in Behalf of the European Hypothesis

Other arguments for Europe have varied considerably in value. More than once the thesis has been advanced that the early habitat of the Indo-Europeans should be sought in Europe because it is there and not in Asia that the languages of the family cover the greater area and show the more variety. It is true that most of the Indo-European languages have been European and not Asiatic since prehistoric times, but if this thesis had universal application the early habitat of the English should be sought in the United States, and that of the Spanish should have its focus in Central America.

The absurd argument for Asia that human migration is always westward has long since been generally rejected, although it still crops up occasionally. But few advocates of the Asiatic hypothesis have been able to resist drawing first a parallel and then an argument from the historical invasions of Europe by Asiatics, such as the Huns, Mongols, and Turks. But these throw no more light on the dispersion of the prehistoric Indo-Europeans than do other historical movements in the opposite direction, such as the migrations that accompanied the crusades, or the frequent German penetrations of Slavic territory for conquest and colonization, or the invasion of Persia and India by Alexander the Great, or the settlement, before

Christ, of Galatia in Asia Minor by Gaulish tribes. Moreover, no actual sign of prehistoric Indo-European migration from Asia to Europe has been discovered, unless such an indication be furnished by the Iranian nomads whom the Greeks called Scythians and who lived in historical times north of the Black Sea.

On the other hand, we can glimpse several early tribal or national movements in the other direction, from Europe to Asia. The best contemporary opinion agrees with the Greek tradition that the Phrygians of Anatolia and other peoples whom we know to have been Indo-European crossed the Hellespont into Asia Minor from Europe, especially from Thrace, at about the dawn of history; Herodotus[18] was probably not in error when he assigned the same provenience to the Armenians. In fact, of the Indo-European peoples in Asia there is none whose known past specifically indicates Asiatic origin, whereas several of them point to Europe as their original home.

Attempt to Delimit the European Home

If it be accepted as a working theory that the original home of the Indo-Europeans probably was in Europe, it is possible, by process of elimination, still further to restrict the place of origin. We can at once cut off the south, the west, and the north of Europe, because these

[18] VII. 73.

regions were earlier occupied by non-Indo-European peoples, and the Indo-Europeans had extended little further than over central Europe, together with southern and central Russia.

Whoever the ancient Pelasgians may have been, it is certain that the Mycenaean and Minoan civilizations of pre-Hellenic Greece were not Indo-European. Italy was inhabited by a non-Indo-European people presumably akin to the peoples of northern Africa; the Etruscans also were not Indo-European, but they arrived later. The Iberians preceded the Indo-Europeans in Spain and a part of France. Whatever the Picts were, Britain was peopled, before the Celtic invasions, by non-Indo-Europeans. The Finno-Ugrians held northern and eastern Europe at least as far south and west as the Volga, although Finland itself was not colonized by the Finns before the Christian era.

This leaves us, in general, southern Sweden, Denmark, the Netherlands, part of France, Germany, Austria, Hungary, Czecho-Slovakia, the Ukraine, Poland, Lithuania, the Balkan countries, and southwestern Russia. Now we can take a further step and cut off all of Europe that borders on the sea; despite opinion to the contrary, there is sufficient evidence that the Indo-Europeans were not familiar with the great ocean.

The various ethnological and archeological

arguments for Germany and Scandinavia seem to have failed. The Teutonic languages of Scandinavia, the Netherlands, Germany, and Austria have drifted, in their fundamental treatment of consonants (Grimm's Law), in accent, in vocabulary, and in the decay of their inflections, so early and so far away from the mother-tongue as represented by the other Indo-European languages that it is difficult to conceive of the primitive home as lying within originally Teutonic territory.

The geographical distribution of the *centum* and *satem* languages speaks against France and southern and western Germany, separated as they were, in earlier times, by the Celts and Germans on the east from the nearest *satem* peoples. The division into *satem* on the east and *centum* on the west must have started with the prehistoric separation of the Indo-Europeans, and contact must have remained longer and closer within each group than between the two groups, so that the division was from the beginning a geographically clean-cut one, just as it is today. To assume that the separation took place in western Europe is to assume, not that the prehistoric alignment has been preserved, but that it was lost and later miraculously restored a thousand miles to the eastward, and that, too, without having left any traces of the *satem* group in the place of its origin. Indeed, some such difficulty as this must

be faced by any theory that fails to locate the Indo-European home near the present line between *centum* and *satem*.

Just before their separation the Indo-Europeans were still, at least partially, a more or less nomadic, cattle-grazing people, probably widely spread geographically and inhabiting vast plains. These conditions are poorly met by the territory south of the Carpathian Mountains—Czecho-Slovakia, Hungary, and the Balkan peninsula.

We have left, finally, the great plain of central and southeastern Europe, which embraces, roughly, the present Poland, Lithuania, Ukraine, and Russia south and west of the Volga; toward this region the balance of probability seems to lean. Almost every condition is satisfied by the conception of the Indo-Europeans as inhabiting some part of this plain as late as 3000 or 2500 B.C. (they knew at least one metal before the dispersion, certainly copper), early differentiated linguistically into distinct groups and covering a vast territory, a pastoral people partially gone over to primitive agriculture, but still nomadic enough to change their habitat freely under changing economic or political conditions. Their dispersion must not be thought of as taking place all at once and all together, however. It was rather a gradual spreading and dividing, requiring a considerable period of time.

Adaptive Radiation

The Assyro-Babylonian, Hittite, Egyptian, and Aegean civilizations were full-grown when or before the youthful Indo-Europeans appeared on the scene and joined the Mycenaeans and Minoans in the development that led

> "To the glory that was Greece
> And the grandeur that was Rome."

But, as Bloomfield has recently pointed out[19] in another connection, all these material civilizations of the Aegean basin "are nearly inarticulate in their existing literary expressions; and the pictographs and linear writing at Knossos, even more than the silence of the Mycenaean age, are ominous signs of essential illiteracy. Jewish literature is of a later time, produced under new impulses, to some extent extraneous, and to some extent in a spirit of protest against these very civilizations."

The Indo-Europeans must have brought with them some almost organic quality, peculiarly their own, which made possible, not only this profoundly productive union with alien cultures in the Mediterranean, but also the creation, likewise largely out of their own genius, of the literature, philosophy, and religion of India, on the one side, and of the western world's mod-

[19] *Transactions of the American Philological Association*, 1919, vol. 50, p. 76. *Cf.* also, by the same author, *Journal of the American Oriental Society*, 1921, vol. 41, p. 201.

ern material civilization, on the other. They had an individual and ethnic personality, a restless mental and physical energy, an urge to progress that early distinguished them from all other peoples. From the first Indo-European expedition into an adjoining valley in search of game down to the discovery of the poles by Peary and Amundsen, the Indo-Europeans, more than any other folk, have been driven by an inherent unrest to and fro over Europe and Asia and to the ends of the earth. The Celts, for example, have visited at one time or another almost every quarter of Europe and even crossed into Asia Minor.

These countless migrations have obscured the trail, and, save for the general principle of archaic survival through isolation, we do not know, for example, why the most ancient Indo-European people of which we have record came to rest in India, on the extreme border of Indo-European territory. Philologists have frequently stressed such cases of linguistic archaism on the part of tribes that have wandered far from their seat of origin, and perhaps they have overstressed them.

But back of these migrations of Indo-European early history and late prehistory was a time when human life and human motives were simpler and conditioned more as were the life and motives of other mammals. As the race advances in social evolution the circumstances

that impel and guide the movements of men become more and more numerous and complex. Conversely, the more primitive the civilization, the more closely are these circumstances identical with those that govern the migrations of other animals: overcrowding, tribal or racial warfare, heat and cold, vegetation, supply of food and water, mountains, deserts, rivers, lakes, swamps. Certainly the two influences that have been most determinant in disturbances in the distribution of animals, the influences of climate and geography, have also been more or less determinant in the distribution of races, peoples, and languages.

The principle underlying the distribution of a primitive family of peoples or languages can not but be somewhat analogous to the biological principle of adaptive radiation: we expect to find the origin of a genus near the geographical center of its various species, with the greatest conservatism of type near the center and the greatest variation at the ends of the radii. There is significance in the fact that to some extent the geographical distribution of the main divisions of the human race agrees with that of the lower animals. And there is significance in the fact that the Semites, for example, have covered a restricted territory as compared to that of the Indo-Europeans, and consequently their languages have been subjected to

less variation from one another and from their assumed original.

The first Indo-Europeans must have originated somewhere, and they must have diverged from some focus and gradually spread over the territory which we find them occupying at the beginning of history. As they radiated away from this focus there must have been increasing adaptation to the languages and institutions of other peoples (matriarchy, for example), and consequently increasing variation from those near the center. The evidence of history is that a strong people gradually extends its borders in every direction unless stopped, hindered, or deflected by some barrier. Rapid marches to a distant goal usually lead only to temporary conquest or to defeat, not to permanent establishment of people or language: Alexander into India, Caesar into Britain, Attila into Gaul, Genghis Khan into Russia. Nor does linguistic supremacy always follow political domination: the Goths, Vandals, Franks, and Celts conquered realms upon which they could not impose their languages. The growth and spread of language proceeds step by step. The Latin, for example, has gradually radiated in every direction from Rome as a center; it has paused only where it was opposed by strong natural or political barriers.

It is reasonable, therefore, to look for the prehistoric home of the Indo-Europeans near

the geographical center of their later linguistic distribution, and to hope to find there great conservatism of type.

Conservatism of Type at the Center

The plain of eastern central Europe, toward which a dozen arrows have directed us, lies between the *centum* and *satem* groups, in the very heart of Indo-European territory as we now know it. And within this plain live the Lithuanians, who have preserved more faithfully than any other people on earth the language and the cultural position assumed for the prehistoric Indo-Europeans. Not a scintilla of evidence, historic or linguistic, has been produced to indicate that the Lithuanians have ever stirred from their present dwelling-place since Indo-European times. Indeed, it has been made very probable, on the grounds of linguistics, natural science, and geography, that the Lithuanian stock has dwelt in its present location for at least five thousand years, which would approximate the duration of the Indo-European period, so far as it is known. There is perhaps no other part of Indo-European territory for which there is so much evidence against autochthonous, non-Indo-European predecessors.

Conclusion

Locke, in his *Essay Concerning Human Understanding*,[20] says that the ground of probability lies in the conformity of anything with previous knowledge, observation, and experience. And it is such conformity that carries the theory of the eastern European origin of the Indo-Europeans over the line that wavers between sheer speculation and reasonable probability. No other part of Europe or Asia agrees so well with the historical distribution of the Indo-Europeans, with the relations of the various languages to one another (for example, Indo-Iranian and Balto-Slavic, Slavic and Germanic, Lithuanian and Slavic, Italic and Celtic), and with all that is known or surmised of the primitive Indo-Europeans.

This region lies at the center of Indo-European territory; it is situated between the *centum* and *satem* groups of languages; it is adjacent to the Finno-Ugrian, with which Indo-European must very early have come in contact, as is shown by prehistoric borrowings on the part of the former; it includes the most conservative of Indo-European peoples and the most archaic of their languages; it offers abundant remains to prove that it was a center of Neolithic civilization, although the study of Russian and Polish and Lithuanian prehistory is still in its infancy; it nourishes every plant

[20] IV. 15.

and animal that we have the slightest reason to consider Indo-European; it contains great plains such as the Indo-Europeans required for the grazing of their numerous cattle, and fertile valleys for the pursuit of their agriculture; it embraces the forests that are indicated by the names of certain Indo-European trees and animals; it is bisected by the beech line; it is the home of the birch; and it is the home of the honey-bee. No other region dovetails so well with what is known of Indo-European prehistory.

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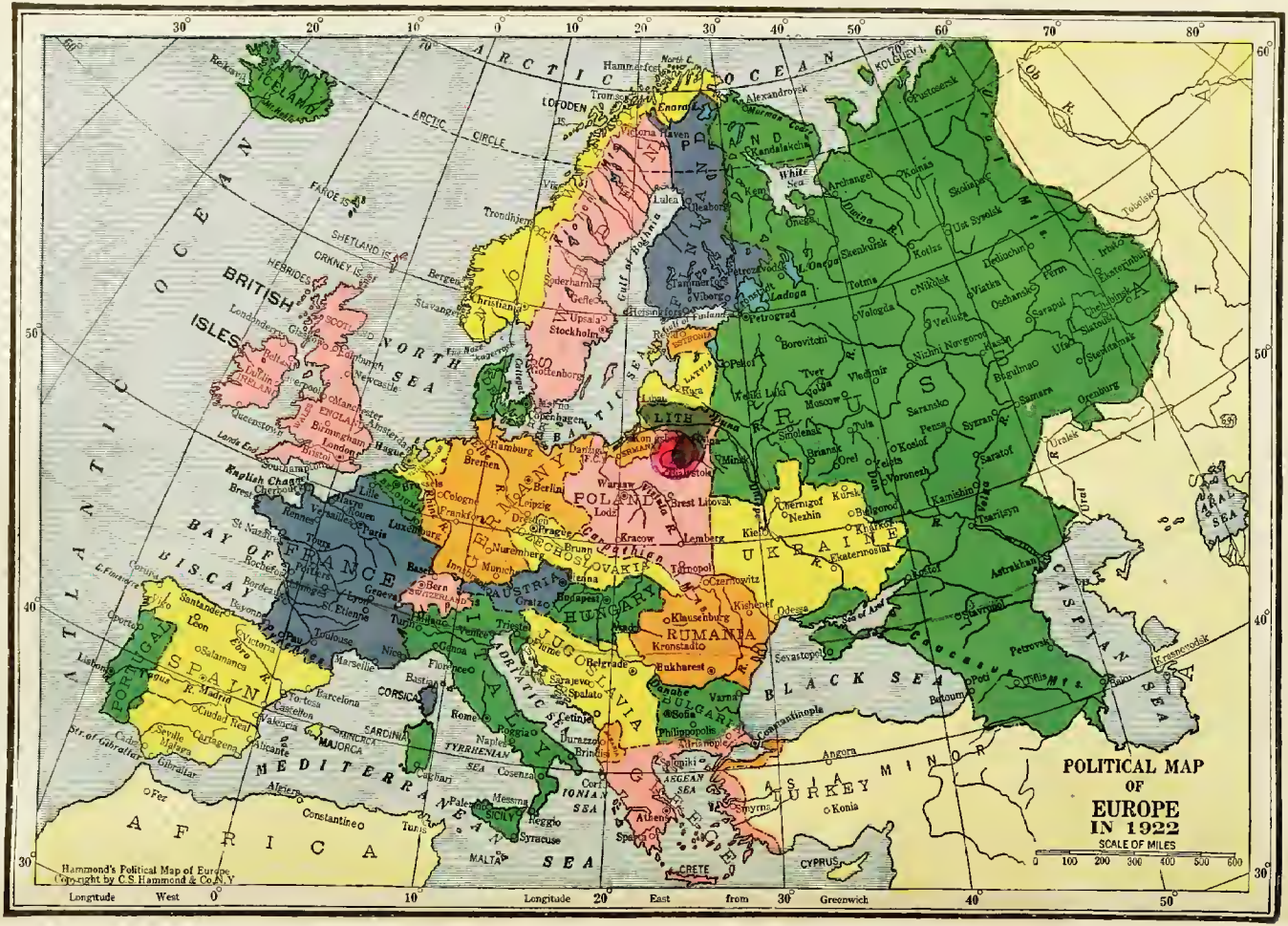
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